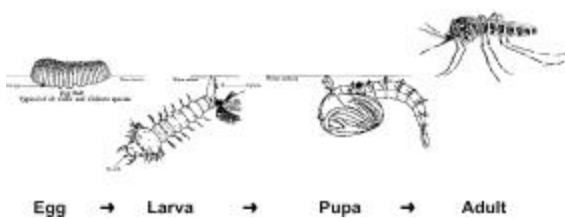


Life Cycle of the Mosquito



The mosquito goes through four separate and distinct stages in its life cycle: Egg, Larva, Pupa, and Adult. Each of these stages can be recognized by its special appearance. The time it takes for the egg, larva, and pupa stages to develop depends on temperature and species characteristics. Depending on the environment, some species can go through their entire life cycle in as little as four days or as long as one month.

Reducing Mosquito Populations

Be aware that mosquitoes can breed in any water that stands for four to five days. This includes buckets, barrels, cans, tarp hay covers, ponds, bird baths, etc. Be sure to check containers in "out-of-the-way" places.

Prevent stagnant pools of water. Discard or drill holes in the bottom of old tires and other containers around your farm where water can accumulate and serve as a breeding ground for mosquitoes.

Change the water at least every week in stock tanks, bird baths, etc. Aerate water that is not regularly changed. Add larvae eating fish to ponds and stock tanks.

Reporting Suspected Cases in Horses

Horse owners are encouraged to contact their veterinarian if their animals display signs of illness including loss of appetite, fever, tremors, weakness, or inability to stand.

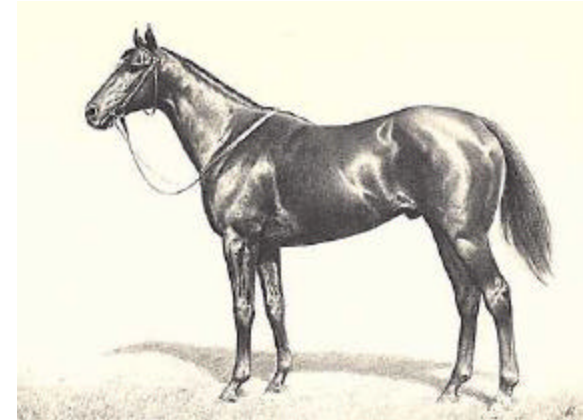
Veterinarians are required to report all cases of equine encephalitis. Any suspected cases of West Nile virus in horses and other equines must be reported to the Washington State Department of Agriculture (WSDA).

- ! State Veterinarian's Office, 360-902-1878
or kconnell@agr.wa.gov
- ! Regional WSDA Veterinarians
 - ❖ Benton County,
Peter Tran, 509-786-2712
 - ❖ Franklin County,
Lee Williams, 509-765-3922
- ! U.S. Department of Agriculture,
360-753-9430

Obtaining More Information

- ! Benton-Franklin Health District,
509-582-7761 - Environmental Health
- ! Benton County Mosquito Control,
509-967-2414 - Kevin Shoemaker
- ! Franklin County Mosquito Control,
509-545-4083, Brain Benner
- ! WSU Extension Office,
509-735-3551- Jean Smith
- ! Washington State Department of Health
1-866-78VIRUS (1-866-788-4787)
- ! Washington State Department of Health
<http://www.doh.wa.gov/EHP/TS/ZOO/WNV/WNV.html>
- ! Washington Department of Agriculture
<http://www.wa.gov/agr/default.htm>
- ! Centers for Disease Control & Prevention
<http://www.cdc.gov/ncidod/dvbid/westnile/index.htm>
- ! Animal & Plant Health Inspection Service
<http://www.aphis.usda.gov/lpa/issues/wnv/wnv.html>

West Nile Virus & Horses



Cooperating agencies: Washington State University, U.S. Department of Agriculture, and Benton County. Extension programs and employment are available to all without discrimination. Evidence of noncompliance may be reported through your local Extension office.

West Nile virus

West Nile virus is a mosquito-borne disease of birds that was first detected in the U.S. in 1999. It has steadily moved west and late in 2002, the disease was confirmed in 2 birds and 2 horses in Washington State. The centers for Disease Control and Prevention have predicted that the West Coast will probably be hit hard with West Nile virus in 2004.

The virus is spread by mosquitoes that get infected when they feed on a diseased bird. There are at least 6 known species of mosquitoes in our region that can transmit this virus. Our mosquito season generally runs from March through October, peaking in August and September.

Although the virus does not affect most humans and horses, it should be considered a serious threat. The virus normally causes mild symptoms, but it can cause encephalitis, an inflammation of the brain, or lining of the brain and spinal cord. The virus can affect all equines, including horses, mules, and donkeys.

Symptoms in Horses

Most horses are not affected by the virus and do not show signs of illness. Look for two or more of these symptoms: loss of appetite, fever, difficulty walking (stumbling, knuckling over, falling), head tilt, muscle tremors and weakness, depression, hypersensitivity, paralysis and convulsions. The mortality rate in horses that contract West Nile virus is about 30%. Approximately 40% of the horses that recover will exhibit some residual affects of the disease, such as neurological or behavioral abnormalities.

Vaccinating Horses

To protect horses and other equines, the U.S. Department of Agriculture (USDA) has licensed two West Nile virus vaccines. These vaccines must be obtained from veterinarians and must be administered by or under the supervision of a veterinarian with a valid veterinarian/client/patient relationship. The vaccination requires two doses, ideally three to four weeks apart. Depending on the vaccine used, immunity may not be achieved for up to six week after the second dose. An annual booster prior to the mosquito season is required.

Horses vaccinated against other mosquito-borne diseases, such as Western Equine Encephalomyelitis (WEE), are not protected against West Nile virus. However, there are new combination vaccines that include West Nile virus with Equine Encephalomyelitis strains.

Previously Vaccinated Horses:

1. If your horse was fully vaccinated last year, follow-up with a booster a few weeks to a month prior to the mosquito season this year.

Unvaccinated Horses:

1. Vaccinate all previously unvaccinated adult horses and all young horses under one year-of-age in March/April with a two-dose initial series, ideally three to four weeks apart. Talk to your veterinarian about your best options for vaccinating pregnant mares.

2. Young horses under a year-of-age may need a third shot approximately eight weeks after the initial two-dose series.



Other Protection for Horses

Vaccination of horses is the primary protection against West Nile virus. However, other steps can be taken to minimize the treat of West Nile virus. Recent research suggests that keeping horses in stalls at night could reduce their risk of infection. Stables should have well-maintained screens. Using fans in stables can also reduce the ability of mosquitoes to feed on horses.

Additional precautions include treating the horse area with an insecticide and/or using repellents on horses. Repellents require good coverage over the entire horse and frequent re-applications. Consult your veterinarian about their use.

Protecting Yourself from Mosquito Bites

Apply insect repellent containing DEET (N, N-diethyl-m-toluamide). The more DEET a repellent contains the longer time it can protect you from mosquito bites. Choose a repellent that provides protection for the length of time that you will be outdoors.

! Wear long-sleeved shirts and long pants whenever you are in mosquito-infested areas. Spray clothing with repellents containing permethrin or DEET as mosquitoes may bite through thin clothing.

! Stay indoors at dawn, dusk, and in the early evening, which are the peak mosquito biting times.

WHENEVER YOU USE AN INSECT REPELLENT, BE SURE TO READ AND FOLLOW THE MANUFACTURER'S DIRECTIONS FOR USE.